CRES
Culebra Component

Department of Biology
UPR- Río Piedras

Team

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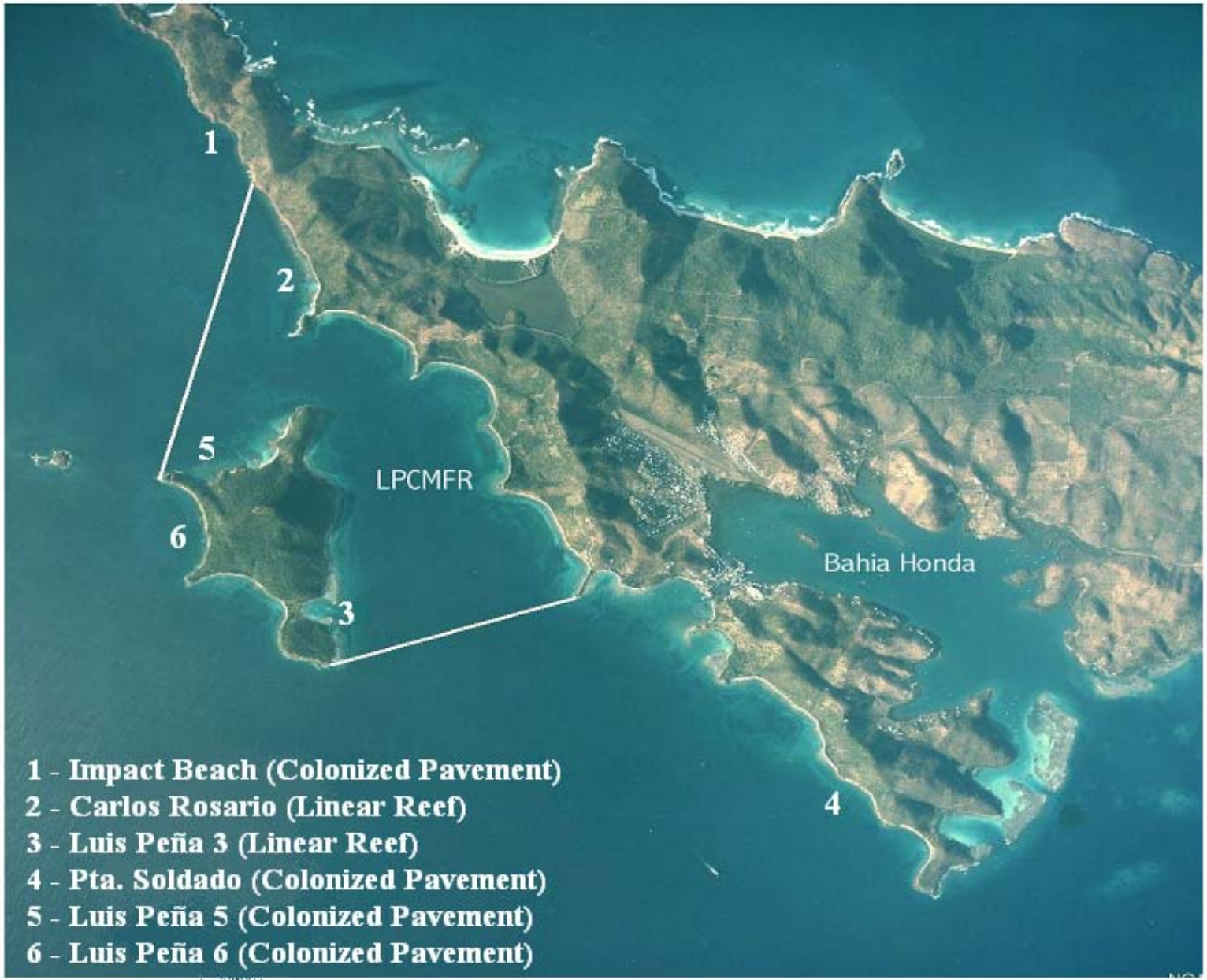
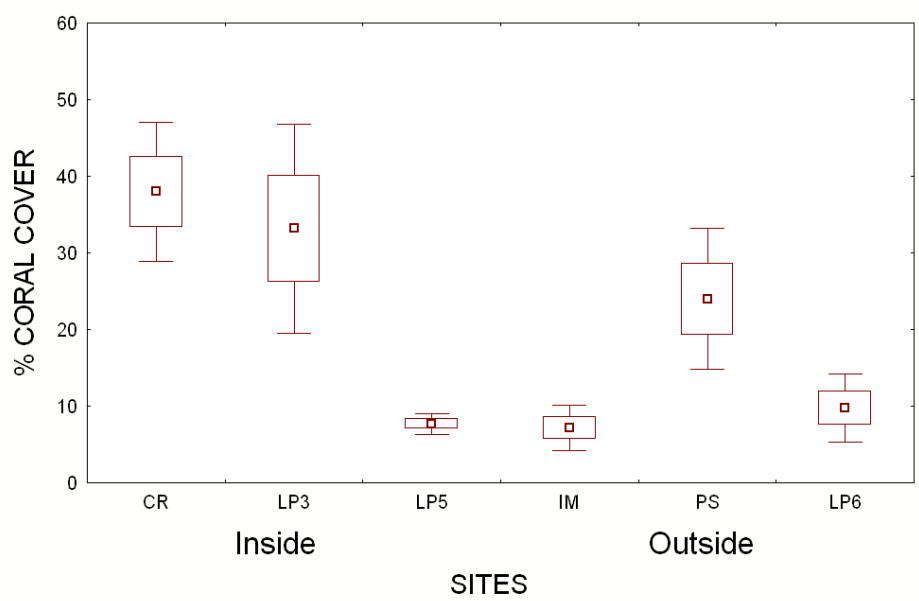
María del Mar López – Graduate Student

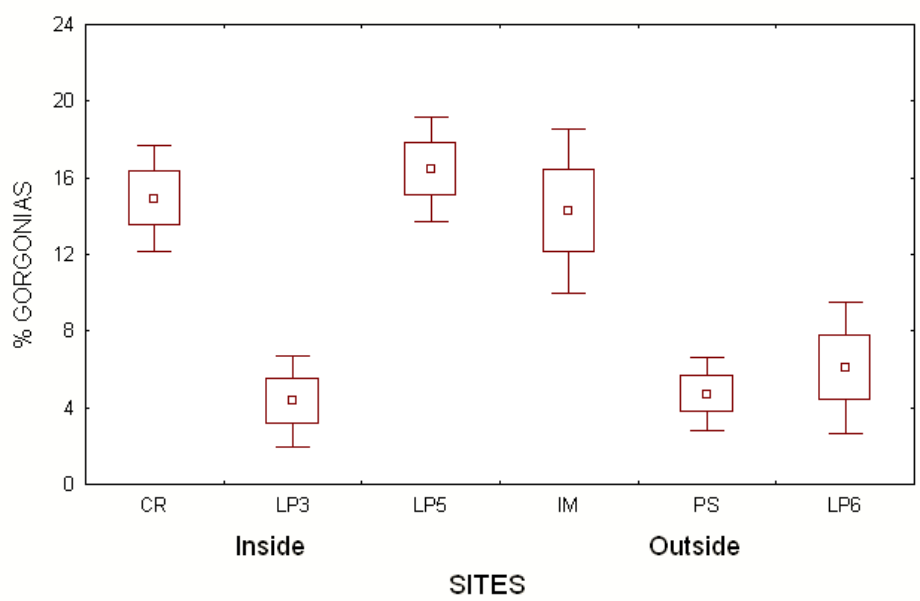
Projects

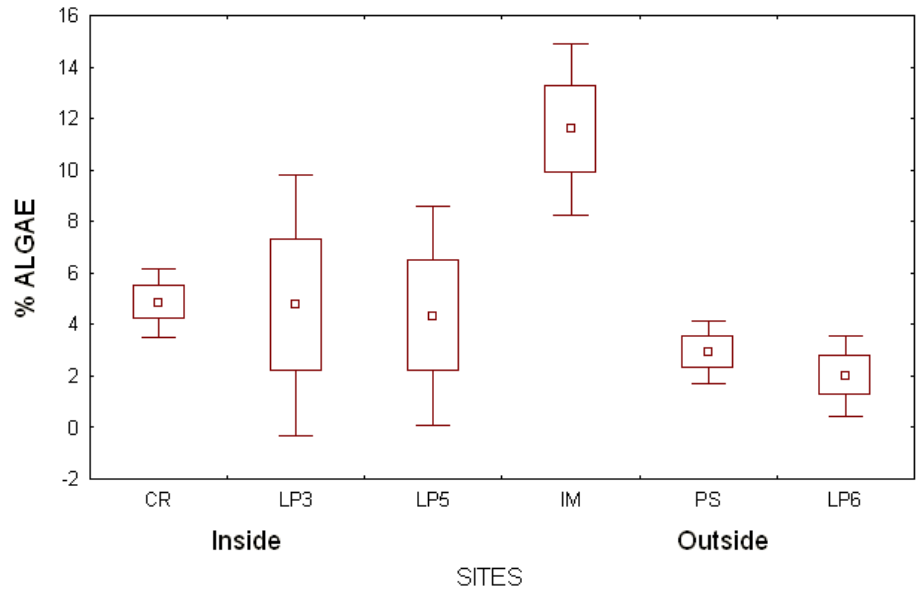
- Monitoring of benthic invertebrate and fish communities within and outside the MFR.
- Red Hind mark-recapture study
- Sea fan aspergillosis

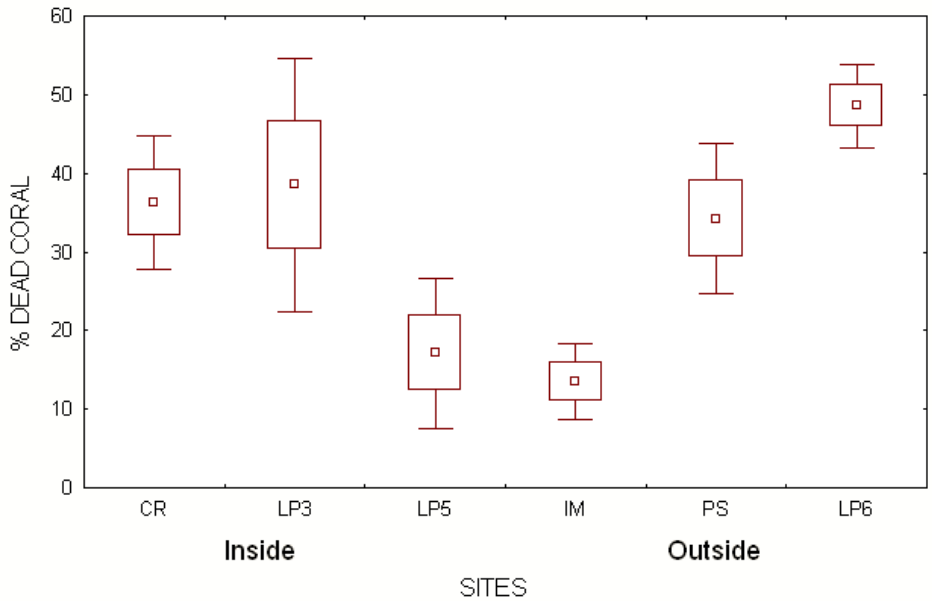
Study Sites

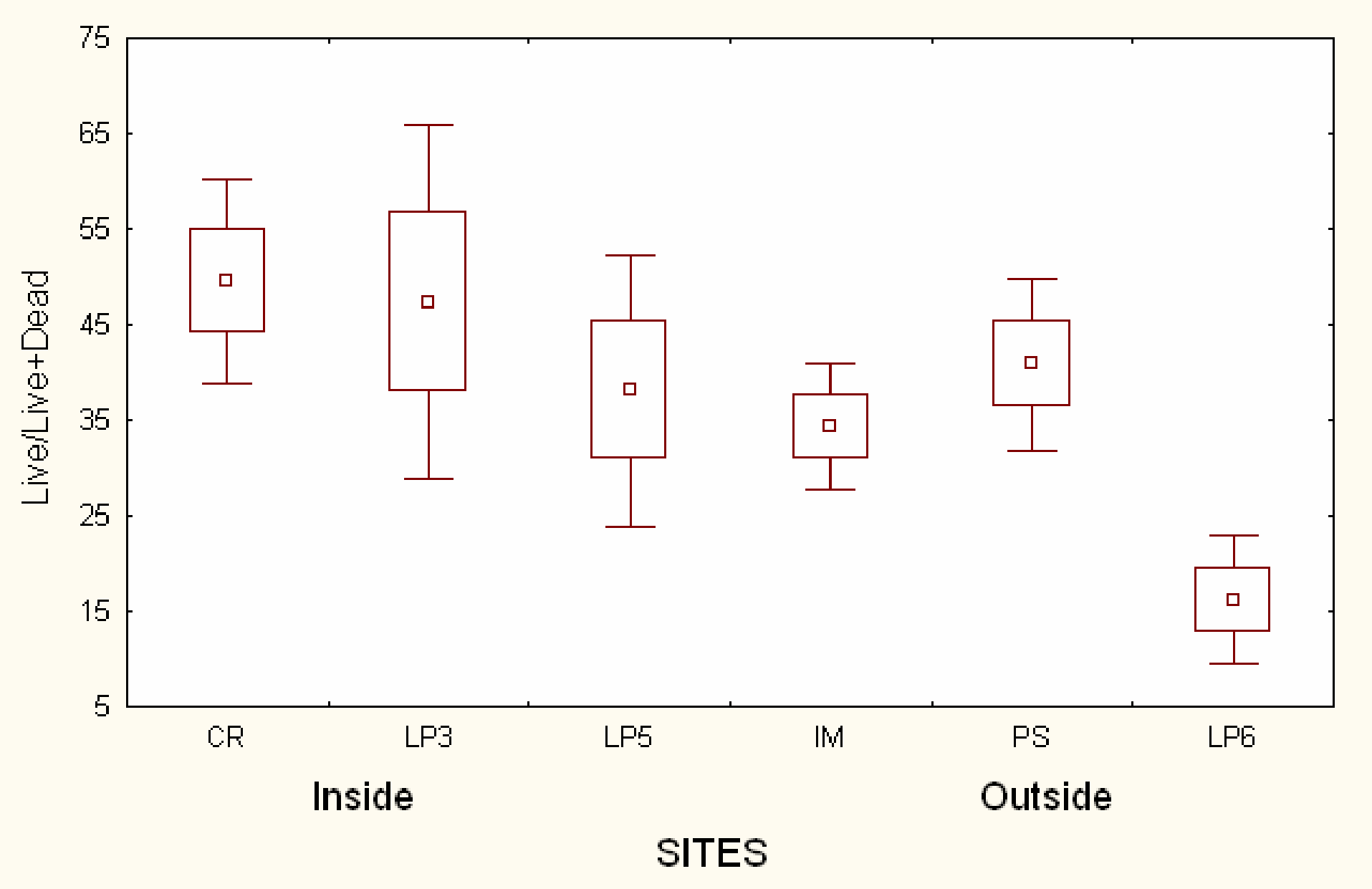

1
2
5
6
3
4
LPCMFR
Bahia Honda
1 - Impact Beach (Colonized Pavement)
2 - Carlos Rosario (Linear Reef)
3 - Luis Peña 3 (Linear Reef)
4 - Pta. Soldado (Colonized Pavement)
5 - Luis Peña 5 (Colonized Pavement)
6 - Luis Peña 6 (Colonized Pavement)


% CORAL COVER
60
50
40
30
20
10
0
CR
LP3
LP5
IM
PS
LP6
Inside
Outside
SITES


% GORGONIAS
24
20
16
12
8
4
0
CR
LP3
LP5
IM
PS
LP6
Inside
Outside
SITES


% ALGAE
16
14
12
10
8
6
4
2
0
-2
CR
LP3
LP5
IM
PS
LP6
Inside
Outside
SITES


% DEAD CORAL
60
50
40
30
20
10
0
CR
LP3
LP5
IM
PS
LP6
Inside
Outside
SITES


75
65
55
45
35
25
15
5
Live/Live+Dead
CR
LP3
LP5
IM
PS
LP6
Inside
Outside
SITES

Fungal infection in Caribbean sea fans (*Gorgonia ventalina)*

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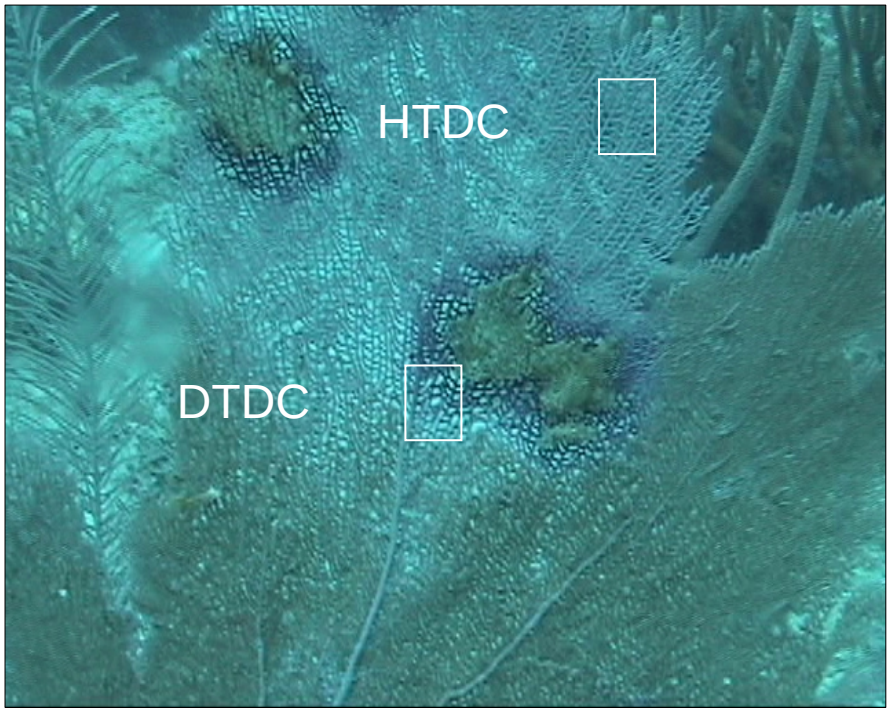
Objectives

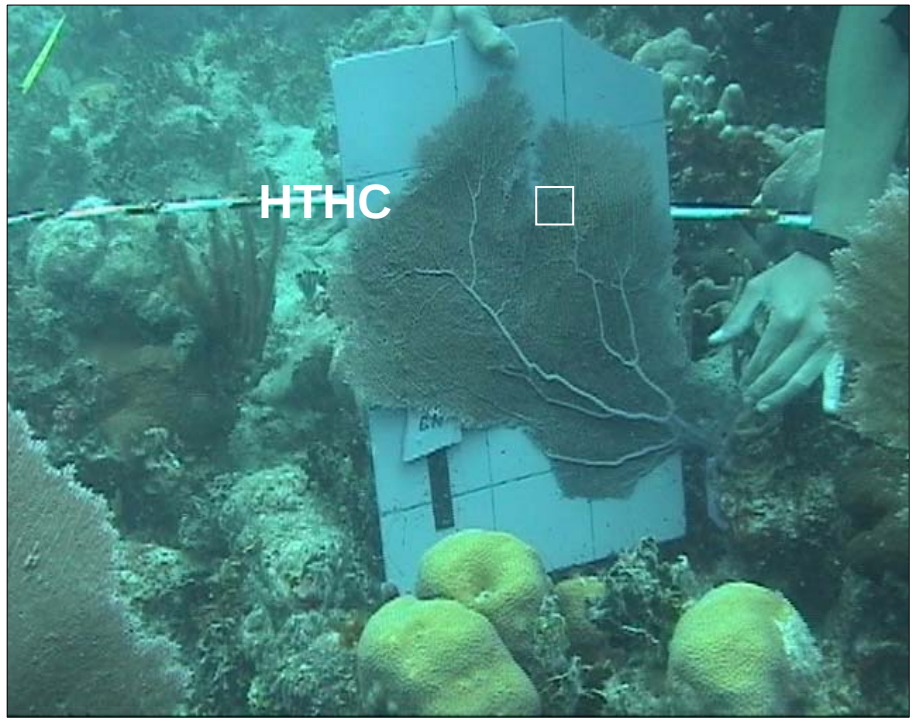
- Compare the fungal community of lesions with lesion-free tissue from diseased *Gorgonia* colonies.

- Compare the fungal community of lesions tissue from diseased colonies with the fungal community of healthy *Gorgonia* colonies.

Types of tissue sampled: healthy tissue from diseased colonies (HTDC), diseased tissue from diseased colonies (DTDC) and healthy tissue from healthy colony (HTHC).



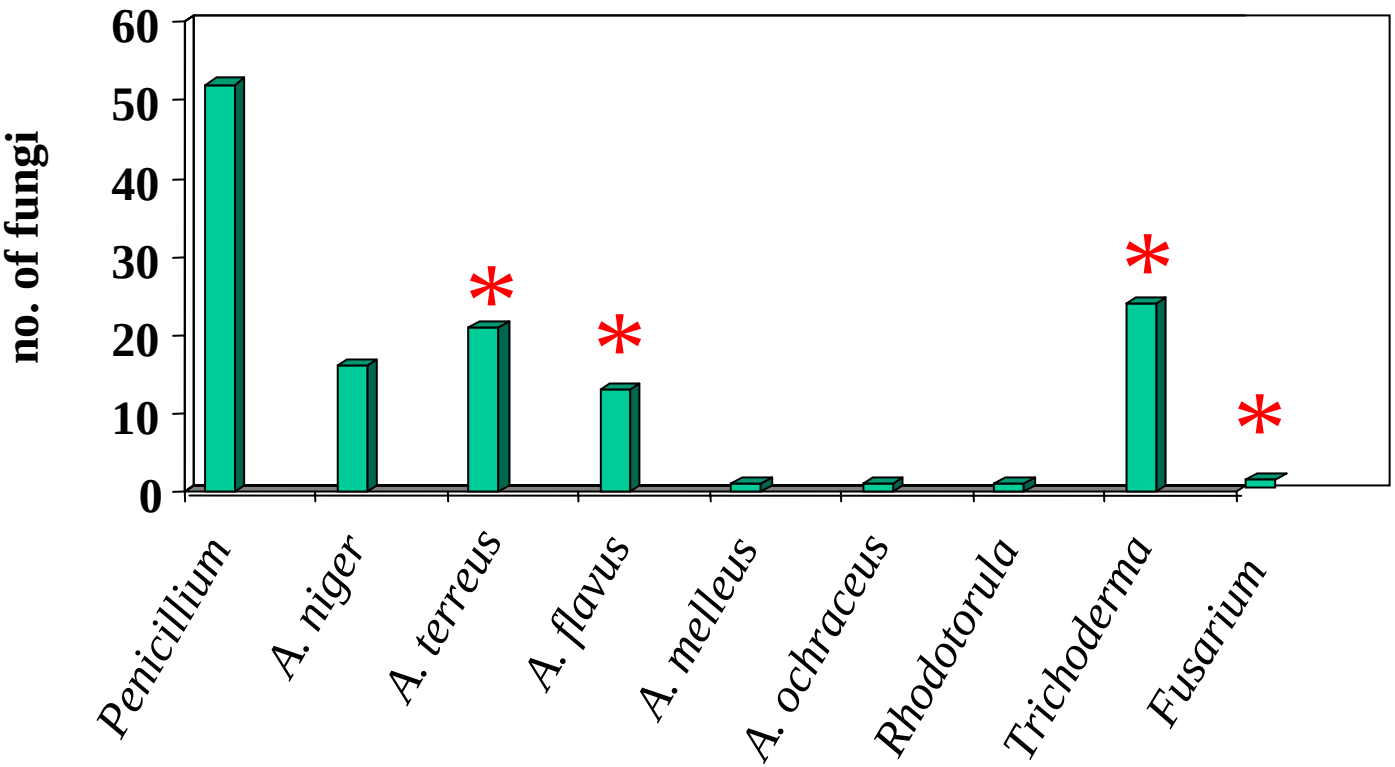
Diseased Colony



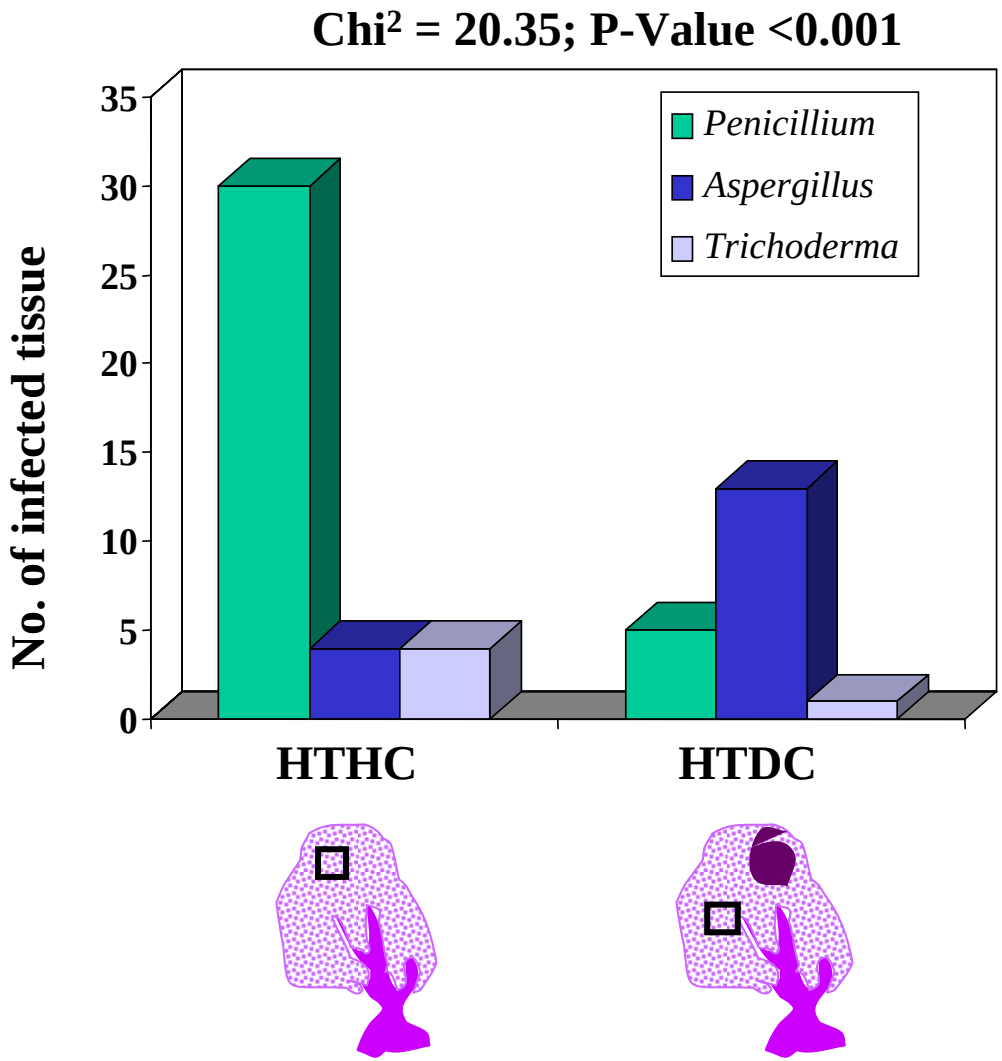
Healthy Colony

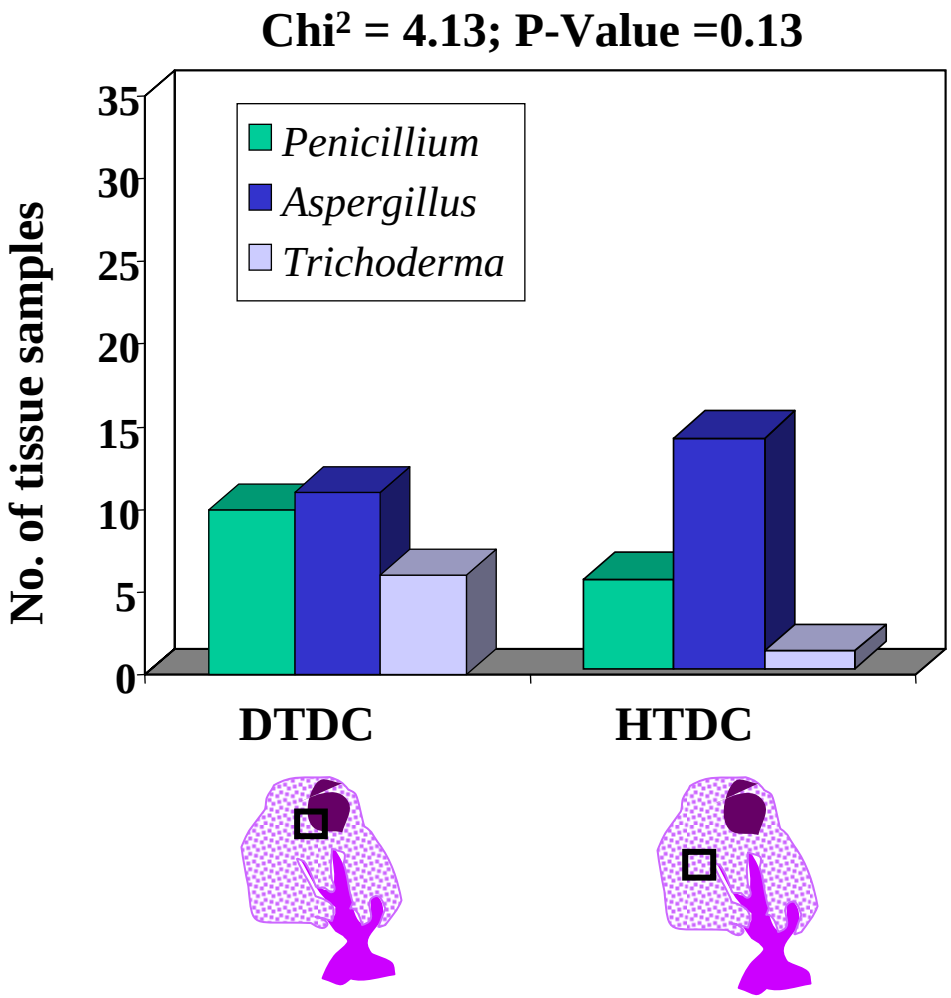
Tissue samples (6cm^2) were collected from 63 diseased and 78 healthy colonies from 4 sites in Culebra.

Fungal community

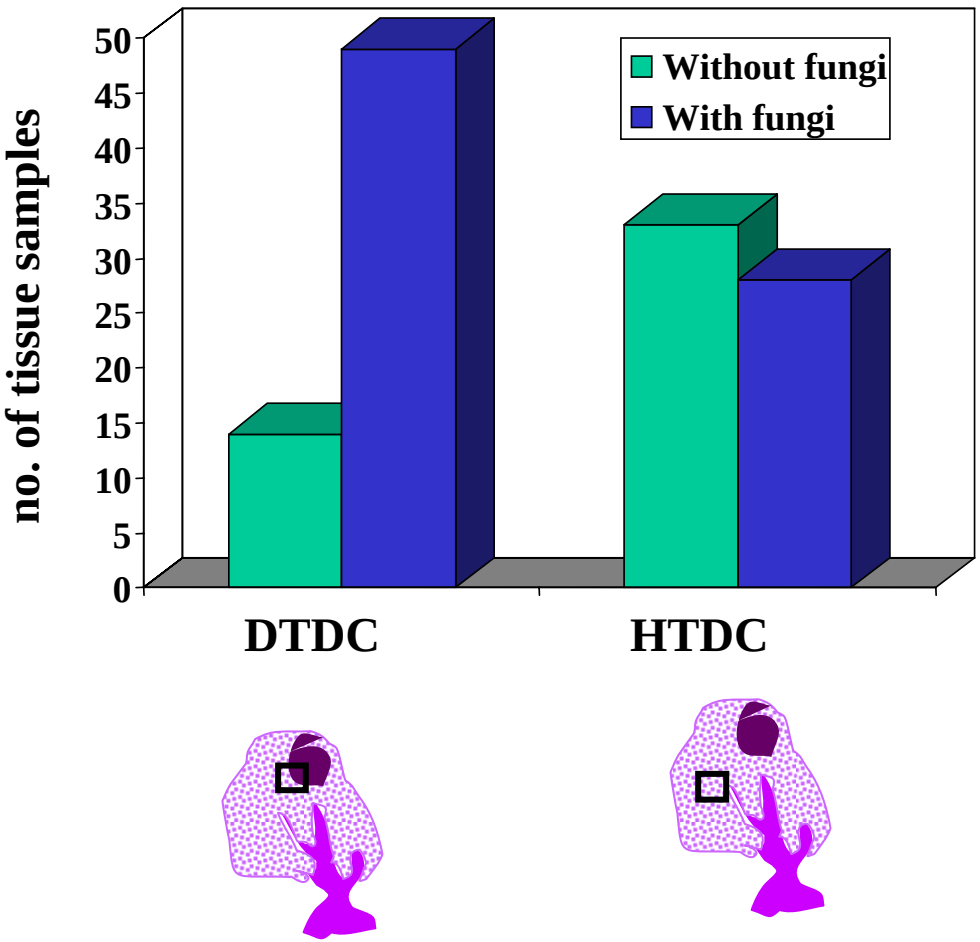


* Confirmed by sequencing


Chi² = 20.35; P-Value <0.001
No. of infected tissue
35
30
25
20
15
10
5
0
Penicillium
Aspergillus
Trichoderma
HTHC
HTDC


Chi² = 4.13; P-Value =0.13
No. of tissue samples
35
30
25
20
15
10
5
0
Penicillium
Aspergillus
Trichoderma
DTDC
HTDC

Chi^2 = 13.37; P-Value < 0.0001



Conclusions

- No single fungi was always associated with diseased colonies.
- *Aspergillus* sp. was significantly more common in diseased colonies than in healthy colonies
- The incidence of *Pencillum* sp. was significantly higher in healthy colonies than in diseased colonies.
- Within diseased colonies*, Aspergillus* was not more common in diseased tissue than in healthy tissue, but fungi load was higher in diseased tissue.
- *Aspergillus sydowii* was not found.
- *A. flavus, A. niger*, and *A. terreus* were found. They are common soil fungi. *A. flavus* is an opportunistic human pathogen and produces mycotoxins.